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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,155	10/31/2006	Hermann De Ciutiis	27551U	7630
20529	7590	12/26/2008		
THE NATH LAW GROUP 112 South West Street Alexandria, VA 22314			EXAMINER DUCHENEAUX, FRANK D	
			ART UNIT	PAPER NUMBER
			1794	
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			12/26/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/593,155

Applicant(s)

DE CIUTIS ET AL.

Examiner

FRANK D. DUCHENEAUX

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/18/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

3. The disclosure is objected to because of the following informalities: Page 1, line 11 recites "...intensely heat under...". The examiner suggests the use of "hot" or "heated" to make the statement more readable. Page 4, line 34 (and elsewhere within the disclosure) the word "gage" should be rewritten "gauge." On page 5, beginning line 24, and elsewhere within the disclosure, the "component 1" should read as the "heat-protected thermoplastic component 1" consistently.

Appropriate correction is required.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a) because, Figure 1 fails to correctly indicate the plurality of pocket folds as described in the specification. The examiner requests that this figure's **reference number 4** adequately point to the structure as disclosed (see Fig. 2). Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Reference number **5 of Figure 2** has no description within the disclosure. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the

description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

6. **Claims 2-10** are objected to because of the following informalities: The said claims begin with "Component" rather than "The heat-protected thermoplastic component." Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:
- The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
8. **Claim 6** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The applicant(s) claim a sector of 10 to 30 mm. The examiner notes that a sector necessarily denotes an area; however the applicant(s) have provided "sector" values of only a single dimension (e.g. not mm²).

9. **Claims 8-9** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims fail to recite between what component(s) of the invention the peeling resistance W_s , is intended to refer.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. **Claims 1-4, 8-10** are rejected under 35 U.S.C. 102(b) as being anticipated by Butler (US Patent 5656353) taken in view of the evidence given in [AZDEL, Inc.] of AZMET product descriptions.

Regarding claims 1-4 and 8-10, Butler teaches an automotive vehicle heat shield (abstract) made of a laminated sheet material of a metallic reflective layer attached to an insulating layer (column 1, lines 47-49), with one layer made of a thermoplastic material and the other layer comprising a reflective metallic layer, said metallic layer having a plurality of perforation and prongs embedded into the plastic layer forming positive connection folding pockets in between the concavities and convexities of the prong portions labeled as reference number 24 (column 2, lines 27-41 and Figure 2). Butler continues to teach that the thermoplastic material is made of AZMET polyester resin

(sold by [AZDEL, Inc], polybutylene terephthalate containing 35% long glass fiber or polyethylene terephthalate containing 35% long glass fiber) and that the metallic layer is made of aluminum (column 2, lines 27-30 and column 2, lines 42-43, respectively).

Given that Butler discloses components identical to that as claimed by applicant(s) - including metallic layer and fiber reinforced thermoplastic - it is clear that the Butler component would also inherently possess identical peeling strength as presently claimed (claims 8-9). Butler further teaches a heat shield consisting of laminated sheet material, whereby the laminated material is positioned so that the metallic layer faces toward the catalytic converter (underside of an automobile) while the plastic insulating layer faces a transmission housing (underside of an automobile) of a motor vehicle (column 2, lines 56-67; column3, lines 1-2; and Figure 3).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
13. **Claim 5** is rejected under 35 U.S.C. 103(a) as being obvious over Butler (US Patent 5656353).

Regarding claim 5, Butler fails to teach a metallic layer with a thickness of 0.01 to 0.1 mm.

However, Butler does teach that the metallic layer will comprise about 20% of the total laminate (metallic layer + thermoplastic layer) thickness and that the metal layer is 0.3 mm thick. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to adjust the thickness of the metal and/or thermoplastic layer(s) for the intended application to improve the reflective and/or heat-insulative properties of the laminate, since it has been held that discovering an optimum value of a result-effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

14. **Claim 6** is rejected under 35 U.S.C. 103(a) as being obvious over Butler(1) (US Patent 5656353) in view of Butler(2) (US Patent 6401961 B1).

Regarding claim 6, Butler(1) fails to teach a sector of 10 to 30 mm of a metallic layer wherein there are arrayed at least 1 to 5 folding pockets.

However, Butler(2) teaches a fuel tank with integrated heat shield (title) comprising a fuel tank made from standard thermoforming plastic (column 4, lines 30-32) with a heat shield made of aluminum (column 4, lines 49-51), said fuel tank formed in such a manner so that the protrusions formed by punching holes into the metal sheet result in very good

mechanical attachment of the heat shield to the tank (column 5, lines 1-11, see also Figures 1-3). Butler(2) continues to teach that perforations (or protrusions) are applied with a density of about 50 per 10 cm² (column 4, lines 63-65). Therefore, it would have been obvious to one of ordinary skill in the art to adjust the density of perforations (P),

$$\frac{50P}{10cm^2} \otimes \frac{1cm^2}{100mm^2} = \frac{1P}{20mm^2}$$

as taught by Butler(2) to the laminated sheet of Butler(1) in order to enhance the mechanical attachment of the heat shield to the tank, since it has been held that discovering an optimum value of a result-effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

15. **Claim 7** is rejected under 35 U.S.C. 103(a) as being obvious over Butler (US Patent 5656353) in view of Wank et al (US Patent 4810321) and in further view of Heucher et al (US Patent 5883172).

Regarding claim 7, Butler fails to teach a hotmelt adhesive provided between a thermoplastic layer and a metallic layer.

However, Wank teaches that to improve the adhesion between the metal and plastic, the metal components are embossed, perforated and shaped in a meandering fashion in the region of the covering plastic, resulting in high resistance to mechanical strain, but such improvements do not result in a bond which is moisture-tight and pressure-resistant (column 1, lines 11-17). Wank continues to teach a metal-plastic laminate (title) using a polyurethane adhesive, whereby metal is coated with a polyurethane (PU) followed by

the PU-coated component coated with a thermoplastic (column 1, lines 53-58). Wank fails to teach an adhesive of a hotmelt type.

However, Heucher teaches a polyamide hotmelt adhesive (title), usable in the automotive industry (column 1, line 61), said hotmelts used to bond non-pretreated metals, e.g. aluminum, to plastics, e.g. polyethylene (abstract and column 2, lines 2-5). Heucher continues to teach hotmelts with high peel strengths on metals and lower permeability to water vapor (column 5, lines 8-12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the laminated thermoplastic-metallic configuration as taught by Butler's automotive vehicle heat shield to include an adhesive layer interposed between said thermoplastic layer and said metallic layer to increase bonding between two said layers and to further modify said adhesive layer with a hotmelt adhesive providing compatible adhesion with enhanced water impermeability, thereby improving the durability of the heat shield's structure.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRANK D. DUCHENEAUX whose telephone number is (571)270-7053. The examiner can normally be reached on M-Th, 7:30 A.M. - 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie E. Shosho can be reached on (571)272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FDD

/Callie E. Shosho/
Supervisory Patent Examiner, Art Unit 1794